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Late Cretaceous foraminifera from Lower Venson Farm Borehole

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Late Cretaceous foraminifera from Lower Venson Farm Borehole

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Figure 1. Stratigraphical position of the foraminiferal faunas from Lower Venson Farm Borehole. (Lithostratigraphy after Bailey *et al*., 1984) **3**

Summary

Three samples from Lower Venson Farm Borehole (TR35SW/27; TR3083 5305) were examined. The foraminiferal faunas from 52 and 57 m depth indicate foraminiferal zone BGS13 and it is suggested that both are from the Lewes Chalk. The sample from 47m contains a fauna from low within zone BGS14 and the very basal part of the Seaford Chalk (immediately above the Upper East Cliff Marl, and lateral equivalents) is inferred.

1 Introduction

Three samples were submitted for micropalaeontological examination in order to determine the biostratigraphical age of the 47-57 m interval and relate it to the lithostratigraphical scheme.

2 Sample details

Lower Venson Farm Borehole (TR35SW/27; TR3083 5305)

MPA52516 Depth 47 m

MPA52517 Depth 52 m

MPA52518 Depth 57 m

3 Faunal List

Foraminiferal faunas are related to the zonal scheme outlined by WILKINSON (2000). The lists below contain selected taxa only. A list of the full fauna is held on file.

3.1 MPA52516

Gavelinella ammonoides
Gavelinella pertusa
Lingulogavelinella arnagerensis
Osangularia cordieriana
Reussella kelleri
Stensioeina granulata granulata
Verneuilinoides muensteri

Biostratigraphical comments: MPA52516 (from a depth of 47 m) contains *Osangularia cordieriana* and *Stensioeina granulata granulata*. The first species first appears at or immediately below the Upper East Cliff Marl, whereas the second appears immediately above that marl, and defines the base of Foraminiferal zone BGS14. *Stensioeina exsculpta exsculpta*, which defines the base of the overlying foraminiferal zone was not present in the samples examined. This indicates that the fauna is from the very basal part of the *coranguinum* macrofaunal zone.

Also significant is the disappearance of *Globorotalites michelinianus*, which occurs commonly in the stratigraphically lower samples. Elsewhere in southern England, this species is generally common throughout the Lewes Chalk, but disappears a little below the Lower East Cliff Marl (i.e. in the uppermost part of BGS13), only to reappear a little above the Upper East Cliff Marl (i.e. within the upper part of BGS14) and ranges up into the upper part of the Campanian. This 'Lazarus' effect tends to be a good, although not infallible, biostratigraphical marker. Its absence confirms that the position of the fauna is within the lower part of foraminiferal zone BGS14.

3.2 MPA52517

Gavelinella ammonoides
Gavelinella cf. *thalmani*
Gavelinella cf. *tourainensis*
Gavelinella pertusa
Globorotalites michelinianus
Reussella kelleri

Biostratigraphical comments: The fauna from MPA52517 (from a depth of 52 m) is essentially similar to that of MPA52518, although *Stensioeina granulata levis* was not found. Many species are long-ranging, but a single specimen of *Gavelinella* cf. *tourainensis* was noted, and if it is correctly identified, it proves an age no younger than foraminiferal zone BGS13 (*cortestudinarium* macrofaunal Zone). This species locally disappears from the record at the Lewes Nodular Chalks in Sussex (*planus* macrofossil Zone), but in Kent it ranges up to the 'East Cliff/Shoreham Marl No.2' (BAILEY et al., 1984).

3.3 MPA52518

Gavelinella ammonoides
Gavelinella pertusa
Globorotalites michelinianus
Reussella kelleri
Stensioeina granulata levis
Verneuilinoides muensteri

Biostratigraphical comments: The lowest sample examined (MPA52518), from a depth of 57 m, contains *Verneuilinoides muensteri*, a species that first appears at the base of foraminifera zone BGS13 (which is approximately coeval with the *cortestudinarium* macrofaual zone). It is accompanied by *Gavelinella pertusa* which first appears within the same foraminiferal zone, probably between the 'Top Rock'/Navigation hardground' and 'Hope Gap Hardground' (and lateral equivalents) (Figure 1). This stratigraphical interval is also the approximate range of *Stensioeina granulata levis* in southern England (BAILEY et al., 1984). The range of the last named species in Germany is given by KOCH (1977) as 'Oberturon' to the basal part of his 'Unteres Coniac' (the German *deformis* Zone and basal *koeneni* Zone). In Britain it is extremely rare and apparently does not have the full range compared to Germany. Its presence suggests that the fauna is from the lower part of the foraminiferal zone BGS13.

4 Conclusions

The foraminiferal faunas outlined above are used to suggest that:

1. the samples from 52 and 57 m are both from Foraminiferal Zone BGS13 (*cortestudinarium* Zone) and the Lewes Chalk can be inferred.

2. the sample from 47 m is from Foraminiferal Zone BGS14 (basal *coranguinum* Zone) in the very basal part of the Seaford Chalk (immediately above the Upper East Cliff Marl, and lateral equivalents).

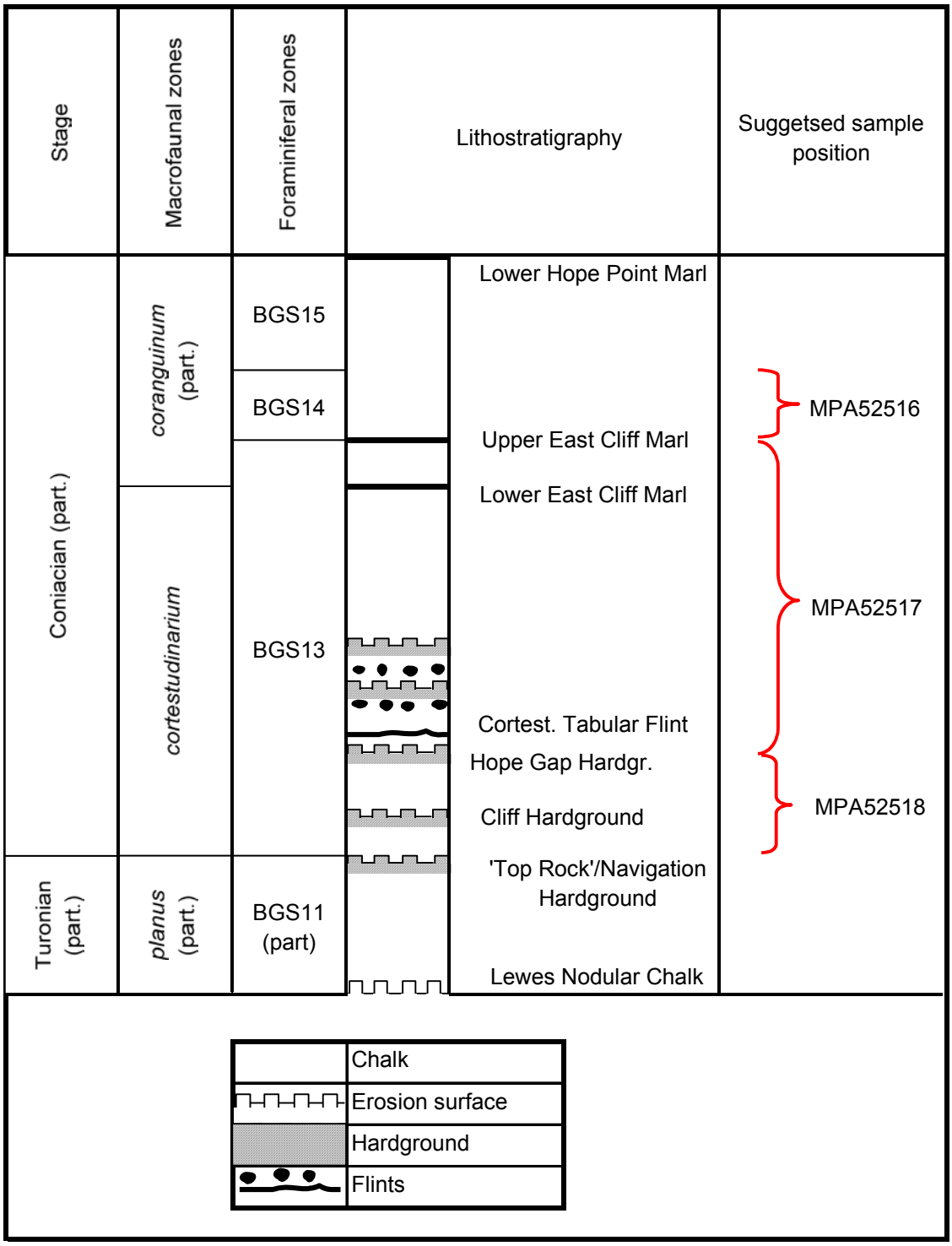

Figure 1. Stratigraphical position of the foraminiferal faunas from Lower Venson Farm Borehole. (Lithostratigraphy after Bailey *et al.*, 1984)

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